

Quality Assurance Sampling Protocol – CLMN – 2012

CLMN is monitoring the accuracy and precision of the field data collected by volunteers. Water samples collected by DNR field staff go through a similar quality assurance protocol. These tests document the accuracy and precision of the data collected and look at natural variability and sampling error. Ten percent of stations that are monitored for total phosphorus (TP) and chlorophyll are chosen randomly each year to participate in collection of quality assurance samples.

In addition to your regular phosphorus and chlorophyll sample you will be collecting:

1. A blank sample,
2. A duplicate phosphorus sample, and
3. A duplicate chlorophyll sample.

You will be mailing a total of 3 phosphorus samples (regular, blank and duplicate).

You will be mailing a total of 2 chlorophyll samples (regular and duplicate).

You will be mailing three lab slips – (regular, blank and duplicate).

The blank phosphorus sample is deionized water that is run through your equipment and preserved with sulfuric acid. If there is any residual phosphorus in your equipment, the blank sample will detect it. The duplicate samples are taken from the same site, at the same time, using the same method, and are independently analyzed in the same manner. The duplicate sample can be used to detect both the natural variability in the environment and any variability caused by field sampling methods.

Field Blank Sample – Total Phosphorus only

Deionized water is provided – there is enough to fill your integrated sampler

An additional 250 ml phosphorus bottle is provided

Blue label marked “Blank” is provided.

Blue lab form (Must go with the blank sample).

An extra sulfuric acid vial is provided

Please prepare this sample prior to collection of your regular samples. You might find it helpful to have an assistant.

1. Pour deionized water into the top of your integrated sampler or into your van dorn. It is easier to fill the integrated sampler if you stand on a stool and hold the sampler vertically and have someone pour deionized water from the collapsible container into the top of the sampler. If using a van dorn sampler, have someone hold open one end of the sampler and have a helper pour water from the collapsible container into the van dorn.
2. Dump out the water.
3. Fill the water collection bottle with about a ½ cup of deionized water and rinse.
4. Dump out the water used to rinse the water collection bottle.
5. Fill the integrated sampler or van dorn with the deionized water provided to you by pouring it in through the top of the sampler to approximately the 6 foot tape mark. It is okay to over fill.
6. Drain the water from the integrated sampler into the water collection bottle (like you normally do).
7. Fill a 250 ml “phosphorus” bottle with the water from the water collection bottle.
8. Add a vial of sulfuric acid to the sample to preserve it, check pH.
9. Fill out blue label and put it on the sample. The label will say “blank”.
10. Refrigerate sample until ready to mail.
11. Fill out blue lab form. The blue lab form will say “blank” on the top.

Duplicate phosphorus and chlorophyll sample

One additional 250 ml phosphorus bottle is provided.

One additional chlorophyll mailing tube is provided.

Extra zip lock bag for phosphorus bottle is provided.

Green labels for duplicate phosphorus and chlorophyll samples are provided.

Green lab form for duplicate samples is provided.

Extra sulfuric acid vial is provided.

Extra chlorophyll filter is provided.

Extra water collection bottle is provided.

1. Collect the lake water in the water collection bottle for the phosphorus and chlorophyll sample (just as you always do). Put the cap on this collection bottle.
2. Rinse integrated sampler and extra water collection bottle with lake water. Collect lake water with your integrated sampler or van dorn.
3. Empty water into the extra water collection bottle, and put the cap on.
4. Go to shore.
5. Process the phosphorus and chlorophyll samples from the first water collection bottle.
6. Fill out and place white label on phosphorus bottle and chlorophyll tube (like you always do).
7. Fill out the white lab form (like you always do).
8. Process the phosphorus and chlorophyll samples from the second water collection bottle.
9. Fill out and place the green label on the phosphorus bottle and the green label on the chlorophyll tube.
10. Fill out the green lab form. The green lab form will say "duplicate" at the top.
11. Refrigerate the labeled phosphorus samples and freeze the labeled chlorophyll samples until you are ready to mail them.
12. Rinse all equipment with distilled water.

When you are ready to mail your samples to the State Lab of Hygiene:

1. Put each of the three phosphorus samples in its own small plastic bag.
2. You will have two chlorophyll samples (one with a green label and one with a white label). Put both the chlorophyll samples and the three lab forms into one of the large plastic bags.
3. Place the empty large plastic bag in the Styrofoam cooler and fill with ice.
4. Place the three separate phosphorus samples in the bag filled with ice.
5. Place the bag with the two chlorophyll samples and the lab forms along the side of the large bag filled with ice. The chlorophyll samples should be next to the ice.
6. Seal the box. Add merchandise return label. Flip the card in the address pocket to its blank side and mail.

